

Abstract

Method for forming ferrocapacitors and FeRAM devices

Ferrocapacitors having a vertical structure are formed by a process in which a ferroelectric layer is deposited over an insulator. In a first etching stage, the ferroelectric material is etched to form openings in it, leaving the insulating layer substantially intact. Then a conductive layer is deposited into the openings formed in the ferroelectric layer, forming electrodes on the sides of the openings. Further etching is performed to form gaps in the Al_2O_3 layer, for making connections to conductive elements beneath it. Thus, by the time the second etching step is performed; there are already electrodes overlying the sides of the ferroelectric material, without insulating fences in between.

[Fig. 6]